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SHOCK AND AWE: A SUFFICIENT CONDITION FOR VICTORY?

By

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College, Department of the Navy or the Department of the Air Force.

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Abstract

This paper examines the role of shock and awe in quick, decisive victory. Shock and awe are explained in the context of strategies that target the perception and understanding of the enemy leadership—such strategies are grouped under the rubric of *perceptual-effects*. These strategies represent a significant point of departure from annihilation or attrition strategies whose target is the enemy's fielded force, and which only indirectly target the perception of the adversary. Shock and awe, when effectively used, appear to induce a sense of hopelessness in the adversary. This causes him to capitulate even though he still maintains sufficient means to resist. In effect, it short-circuits the need to “physically” defeat the enemy by deceiving him into believing that further resistance is futile. To illustrate shock and awe at the operational level, the Israeli victory in the 1967 Six-Day War and the German defeat in the 1944 Ardennes offensive are examined. In the Ardennes case, it is determined that shock was not meted out in sufficient quantity and quality to give the Germans a victory. Shock and awe never reverberated beyond the tactical level rendering it ineffective in defeating the allies. In the Israeli case, shock and awe were instrumental in victory. However, it is still unclear that they were alone sufficient for the quick, decisive victory in the Six-Day War. Both cases, however, are limited in their ability to demonstrate shock and awe in perceptual-effects operations. Such theories are predicated on a technological prowess that is still developing and did not exist in either time period. This paper concludes by extracting the lessons learned from shock and awe operations and how they can best be incorporated in an operational leader's tool kit.

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Purpose:

The purpose of this paper is to examine shock and awe and the part they play in quick, decisive victory. While much has been written about shock and awe, little has been said about the mechanisms through which they translate into victory. This paper will examine shock and awe to determine if together they form a sufficient condition for victory or, if not a sufficient condition, what other conditions must also exist to ensure quick, decisive victory.

Methodology and Case Selection Argument:

I propose to use two historical case studies at the operational level in which a regime of shock and awe were executed. The first case is the Sinai operation in the Six-Day War. In this case, particular emphasis will be placed upon assessing the manner in which Israel implemented a regime of shock and awe in conjunction with rapid and fluid maneuver to gain a quick and decisive victory over superior Egyptian forces. The second case, the 1944 German Ardennes offensive, will serve as a comparison case to the Six-Day War. In this case, the *Wehrmacht* implemented a regime of shock and awe intended to secure a rapid victory. Despite initial success, their strategy was unsuccessful. By examining and comparing these two cases, one successful at gaining a quick decisive victory and the other not, I hope to determine when, and under what conditions, a regime of shock and awe will yield quick, decisive victory.

Introduction:

The real target in war is the mind of the enemy command, not the bodies of his troops. If we operate against his troops it is fundamentally for the effect that action will produce on the mind and will of the commander; indeed, the trend of warfare and the development of new weapons...promise to give us increased and more direct opportunities of striking at his psychological target.

B.H. Liddell Hart, *Paris: Or The Future of War*

Throughout the history of modern warfare, wars have generally fallen into one of two categories. Clausewitz proposed that annihilation of the enemy's fielded forces was the key to victory in war in the ideal sense, and superior maneuver was the mechanism to bring about annihilation¹. Clausewitz recognized also that war in reality often resulted in the gradual wearing down of forces. Delbruck described this in his notion of attrition strategy, whose goal was the exhaustion of enemy forces and indirectly demonstrating to military or political leadership that the gains were not worth the costs.² The common denominator between the two types is the primary emphasis on the physical effects on the enemy's fielded forces—the assumed center of gravity. The psychological effects on military and political leadership, while important, were secondary and assumed to follow from the primary effects. To this taxonomy, I propose we add Liddell Hart's proposition that the true military objective is a "mental rather than a physical object."³ For the sake of clarity in discussion, I propose the term *perceptual-effects strategy* to describe strategies whose primary purpose is to directly effect the perception of enemy leadership.

Rather than achieve our political will over the adversary by defeating or threatening to defeat him, Liddell Hart suggests that imposing a sense of helplessness would induce a sense of hopelessness, and that it is the loss of hope rather than the loss of life that decides the issues of war.⁴ With the rise of modern armies and the industrial base to support them, it

has been near impossible to induce Liddell Hart's "sense of helplessness" in short order.

Rather, industrial-age warfare heralded an increase in the duration and bloodiness of war and a shift toward attritional strategies as the likelihood of quick, decisive victory diminished. It simply has become more and more difficult to outmaneuver and envelop armies of the scale that industrial societies could field. Consequently, quick, decisive victory has become rare.

In the decade since the U.S. victory in Gulf War, military thinkers are re-exploring the notion of quick victory. These propositions rest upon exploiting the on-going revolution in technological capability in information systems, military weaponry and mobility. The general theme of each is that the current revolution in military affairs (RMA) has made possible attacks whose ultimate goal are not the fielded forces, but rather the operational level commander or higher. Rather than physical-effects based operations, which characterize annihilation and attritional warfare, these theorists are focusing on perceptual-effects operations. These operations seek to impose a state of "shock and awe" on the adversary. Shock and awe would create the feeling of helplessness, and in turn hopelessness, and induce our foe to capitulate. To illustrate "perceptual-effects" strategies, it is worthwhile to briefly examine a few of these theories, looking for common threads and seeking to understand the causal chain connecting operational attack to quick, decisive victory.

Ullman and Wade advocate a strategy of "rapid dominance" which capitalizes upon a nexus of strategy, technology and innovation.⁵ A rapid dominance force would control the operational environment through superior battlespace awareness, maneuver, and the ability to strike anywhere in the operational area, as across the spectrum ranging from tactical to strategic. By controlling the environment, rapid dominance controls what the adversary perceives and understands. Rapid dominance seeks to apply a variety of approaches and

techniques to create shock and awe and thus “paralyze or so overload an adversary’s perceptions and understanding of events that the enemy would be incapable of resistance at tactical and strategic levels.”⁶ Essentially, it seeks to impose the sense of helplessness that Liddell Hart spoke of, which would lead to a sense of hopelessness. The enemy would then lay aside his arms and concede to our military objectives and strategic aims.

Ullman and Wade are careful to point out that rapid dominance differs from decisive force. Decisive force implies a traditional force-on-force approach within a strategy of attrition or annihilation. While rapid dominance may share many of the same target sets, its orientation is effects-based and ultimately targets the mind of the commander or political leadership to convince them that resistance is futile. Perceptual-effects-based operations carried out simultaneously across the area of operations, throughout the spectrum from tactical to strategic, would translate to quick and decisive victory with a minimum of bloodshed on either side. Ullman and Wade’s line of reasoning is similar to that of several modern airpower theorists who advocate imposing a regime of “paralysis.”

John Boyd advocated operations exercised with such simultaneity and depth as to render the adversary powerless by denying him the ability to mentally cope with the rapidly developing circumstances of war.⁷ Boyd reasoned that humans (individually and as an organization) understood and acted upon the world through a decision loop of observing, orienting, deciding and acting; or OODA loop for short. The side with the faster and more accurate OODA loop will restrict their adversary’s ability to react to rapidly changing events and cause them to react inappropriately, or not at all (Boyd, 1987).⁸ The result is confusion and disorder, and ultimately a paralysis of ability to cope and a loss of willingness to resist.

John Warden reasons along similar lines as Boyd. His paralysis strategy, often referred to as “decapitation,” views any adversary in terms of multiple centers of gravity (COG).^a He sees the enemy centers of gravity as five concentric circles, beginning with enemy leadership as the most important, and radiating outward to COGs of lesser import.⁹ His optimum strategy is to neutralize the leadership COG, which will in turn paralyze the entire system. Conversely, attacks on outer rings will lead to only partial paralysis that would impose some degree of psychological pressure on the leadership.

The theories outlined above are representative of a growing school of thought that advocates directly targeting the perception and understanding of the enemy leadership. Despite differing metaphors and models, there is a common theme uniting these approaches. The common target is the mind or perception of the leader. Rapidly evolving technology is harnessed for physical and informational attacks against that target. Attacks are conducted with such extraordinary simultaneity and speed as to preclude the enemy from responding in an effective manner. The net effect is to engender a sense of complete helplessness in the adversary’s mind. Finally, it is the perception (not the reality) of the hopelessness of resistance that drives enemy leadership to concede to our military and political objectives even though he still retains the means to resist. The point in the causal chain where these theories get a little vague is how the overwhelming attacks translate into a sense of helplessness even though the adversary still possesses the means to resist. The common link in these theories has shock and awe as the causal mechanism (**figure 1**). This critical link in the chain of causality deserves special attention.

^a What Warden refers to as a center of gravity, may or may not meet Clausewitz’s definition as “the hub of all power and movement.” It appears that in some cases, what Warden terms a center of gravity may in fact be a critical vulnerability.

Shock as a metaphor implies suddenness and rapidity and a sense of overwhelming fear, terror or vulnerability; it implies a radical violation of expectations.¹⁰ Paralysis is often synonymous with shock. While shock typically connotes a short-term and transient state, awe is more long term and enduring. Awe is defined as the power to inspire dread and wonder, or a state of respect suffused with fear. In practice, shock in sufficient quantity or quality leads to creating or reinforcing awe. Shock and awe may exist independently of each other. For the purposes this study, we will assume that shock, in sufficient quantity or quality leads to a relatively enduring sense of awe, which in turn leads to the sense of helplessness/hopelessness. This in turn would cause the adversary military and/or political leadership to make a rational calculation to accede to our military or political objectives.

The use of shock and awe is the critical component in most perceptual-effects strategies, yet is probably the least understood element in the chain of causality. Do these vaguely understood metaphors have meaning at an operational or theater-strategic scale of war? To test this proposition, I will examine two case studies in which shock was a major effect in operations, and in which awe followed (or at least should have followed). The first case will examine Israeli operations against the Egyptian front in the 1967 Six-Day War, which secured a quick, decisive victory for the Israelis. The second case will examine the German offensive in the Ardennes in 1944, which, despite stunning surprise and shock, ultimately resulted in failure.

The Six-Day War- Egypt and Sinai Operations, 5-8 June 1967:

The existence of Israel is an error, which must be rectified. This is our opportunity to wipe out the ignominy, which has been with us since 1948. Our goal is clear—to wipe Israel off the map.

President Aref of Iraq, May 31, 1967

In May 1967, long simmering tensions between Israel and Syria flared up in the "May Crisis" in which false reports^a began to circulate that Israel was concentrating forces on the Syrian border.¹¹ Egypt and Syria, followed quickly by Jordan, responded by mobilizing forces and proclaiming readiness for battle against the "common enemy." On 19 May, the Peacekeeping U.N. Emergency Force (UNEF) was withdrawn from the Israeli-Egyptian border at Egypt's insistence. Radio Cairo began to call for a "holy war" to destroy Israel and liberate Palestine.¹² On 23 May, Egyptian President Nasser announced the closure of the Straits of Tiran, effectively blockading Israel's access to the Red Sea from the Gulf of Aquaba and tantamount to an act of war.

Faced with overwhelming numbers from the Arab coalition and the prospect of a three front war, Israel had neither the strategic space nor population to win a long-term war of attrition. Her only chance to avoid destruction was a short war fought on Arab territory. In short, Israel must launch a preemptive strike in response to any serious threat of attack¹³.

The first blow of the war was struck when the initial wave of 40 Israeli Air Force (IAF) aircraft simultaneously struck ten airfields at 0745 on 5 June. The goal of the initial attacks was to destroy as many Egyptian MIGs as possible and render their runways unusable. As the Egyptian Air Force (EAF) expected the Israelis to attack at dawn, the IAF took advantage of the fact that they were past their peak alert and most EAF patrols had returned to base. The timing also took advantage of the fact that Egyptian commanders, officers and key personnel were typically en route to work to begin their 0800 duty day.¹⁴ As the first wave of aircraft struck, the second wave was close behind, and a third getting airborne. Each wave spent approximately eight minutes over target—a total of eight waves

^a Churchill and Churchill (1967, 28) contend the false reports were a Soviet invention to manipulate the Syrians to strengthen their border to prevent an Israeli punitive raid.

in 80 minutes, with a ten-minute lull followed by another series of eight waves.¹⁵ By 1035, 19 Egyptian airfields were struck and 300 EAF aircraft were destroyed (the overwhelming majority on the ground). The following day went much like the first. By midnight on 6 June, the IAF had destroyed 415 Arab aircraft (393 on the ground) and nearly a third of the EAF's experienced pilots, while losing only 26 of its own aircraft. Israel had broken the back of the EAF in the first few hours of the war.¹⁶ By the second day, it had achieved air supremacy and was ready to begin the contest on the ground.

Egypt had approximately 100,000 troops and 1,000 tanks threatening Israel from the Sinai. The anticipated main lines of Israeli advance were strongly fortified and held by massive troop concentrations. Against this, Israel had some 45,000 men and 650 tanks. The Israelis developed a bold three phase plan: 1) break through Egyptian defenses at two of their key points, 2) an armored division would leap forward to the range of mountains that run roughly north-to-south, east of the Suez Canal to block Egyptian escape routes through the mountain passes, and 3) destroy in detail the trapped Egyptian forces.¹⁷ The attacks would take place along three axes, each under the command of an Israeli Defense Force (IDF) division commander.

General Tal's division began the ground attack while the first day's air strikes were still in progress (**figure 2**). His northern axis would take him along the Mediterranean coast against Rafah with the objective of seizing the Egyptian main logistics base at El Arish (Map 1). After costly breakthrough battles, Tal's force had seized El Arish by midnight, killing or capturing an entire Egyptian division. At 2245 on 5 June, Ariel Sharon's force launched a night attack along the southern axis against fortified Egyptian divisions in the Umm Kateif-Abu Agheila-Quseima area. Using paratroopers to attack the rear, with armor and infantry

battering the Egyptian front line and left flank, the IDF had overwhelmed and broken through Abu Agheila. Along the center axis, Yoffe's division penetrated between the Tal and Sharon's sectors, through Wadi Haroudin, an area considered impassable to mechanized units. Its aim was to penetrate behind the Egyptian forces. On the first night of the war, the force captured the Bir-Lahfan junction, cut-off the Egyptian army forces between the two other combat sectors and prevented the approach of reinforcements from the heart of Sinai.

With the breakthrough at Rafah and Abu Agheila, the Yoffe's force and part of Tal's were behind the bulk of the Egyptian army and racing to blocking positions. By late 7 June, the Egyptian Sinai force was stunned, leaderless, and in full flight towards the Mitla Pass, being pressed hard by Sharon's division and the remainder of Tal's (**figure 3**). As the broken and disorganized Egyptian forces converged on the blocked escape routes, the IAF strafed and bombed them. The pursuing IDF forces completed the slaughter. With only broken and scattered remnants of seven Egyptian divisions behind them, IDF forces raced to the Suez to complete conquest of the Sinai before the enemy had time to sue for peace.

On 9 June, Egypt accepted an unconditional cease-fire brokered by the U.N. In four days, Israel had decisively defeated an Egyptian army of 100,000 and destroyed some 800 tanks and thousands of vehicles. President Nasser later acknowledged the loss of 80-percent of military equipment in the Sinai.¹⁸ Using blitzkrieg tactics, surprise, and shock, the Israelis gained quick, decisive victory at the cost of only 300 dead and 61 tanks destroyed.

Analysis: Shock, Awe and the Six-Day War:

Utilizing blitzkrieg tactics, the IDF sent narrowly focused "pulses of power" against Egyptian positions in order to break through to their rear. The operations ran along parallel lines and employed a measure of simultaneity of attack that gave Egyptian operational

leadership the perception that the enemy was everywhere at once. It could easily be said that the Israelis folded their foe back upon their own OODA loop (Boyd) or that operations achieved rapid dominance (Ullman and Wade). It seems obvious that Israeli operations inflicted shock (or paralysis, if you will) upon Egyptian leadership; shock in sufficient quantity and quality as to prevent them from organizing an effective resistance.

As for the more enduring state of awe, it could easily be argued that the initial air attacks, quickly followed by the ground offensive, together were sufficient to give the Egyptians the perception that the Israelis were invincible and that their situation was hopeless. However, it took two more days after the disaster at Mitla Pass before the Egyptians to sued for peace, in the form of a cease-fire. This brings up an interesting dynamic of shock and awe—what is the interaction of time with shock and awe? Obviously, shock needs to be applied quickly. A gradual escalation undermines the shock effect. On the other hand, it seems that in the Sinai operation, the Egyptians were at first too shocked to even recognize the precariousness of their position, and were not in a position to make the rational calculation based upon perceived hopelessness. It would seem then, that there is a latency period after the application of shock and awe in which the adversary's leadership is too overwhelmed to make any decision. The implication is that shock needs to be meted out in "pulses," allowing time for the sense of helplessness and hopelessness to sink into the mind of the enemy's operational leadership. Otherwise, he will be so paralyzed that he will be unable to react effectively to events.

One might argue that unremitting shock tactics are a more sure method of victory, and that allowing for a latency period would risk giving the foe time to reorganize. Of course a quick, conventional victory is likely if the enemy's ability to effectively resist is completely

unhinged. This reasoning contrasts the differences between physical-effects strategies such as attrition and annihilation, and perceptual-effects strategies. Conventional strategies have always benefited from shock and awe, often dramatically reducing friendly casualties and increasing the likelihood of victory. However, a physical-effects strategy would still require operations to annihilate or significantly attrite the enemy, with the concomitant friendly casualties and risks. The very crux of perceptual effects operations is the ability to short-circuit the need to play out the operation to its logical end. Rather, the enemy would concede well before that point, while he still had the means to resist.

The Ardennes Offensive 1944:

But the final decision in a war is brought about by the realization of one or the other side that war as such cannot be won. To persuade the enemy of this, therefore, is our most important task.¹⁹

Hitler's Speech to His Generals, 12 December 1944

Following the Normandy breakout in the summer of 1944, the Germans were threatened on both east and west borders. By August, Hitler decided upon a last-ditch offensive in the west to salvage a desperate situation. An offensive in the east was discounted due to vast distances it would have to cover, the Soviet unity of command, and her vast manpower resources (not to mention the ideological enmity). With an offensive in the West, he hoped to recapture the port of Antwerp, crippling the allies' already precarious logistical capability²⁰, and drive a wedge between the U.S. and British allies. Hitler believed that a successful offensive could break apart the entire coalition—east and west, and persuade the western allies to abandon their demands for unconditional surrender.²¹ If he could negotiate a settlement in the West, he could turn his attentions exclusively to the East.

The German plan, code named "Watch on the Rhein," had the offensive breaking through the Ardennes Forest, which was lightly defended as it was considered impassable to armor.^a It was originally timed for late November to take advantage to the poor weather conditions that would somewhat neutralize the allies' decided superiority in the air. It would also mask the build up from allied air reconnaissance. With 30 divisions (ten of them *Panzer*), the Germans could deliver a stunning pulse of power against the four infantry divisions and one armor division guarding the Ardennes. The three *Wehrmacht* armies, under command of Army Group B, would attack along a 60-mile front, race across the Meuse, capture the key port of Antwerp and envelop and destroy allied forces north of the Antwerp-Liége-Bastogne line (**figure 4**).²²

To leverage his grand scheme, Hitler ordered the increases in arms production and raising new divisions as early as 19 April.²³ In a last, desperate squeeze of the manpower pool, Hitler was able to raise 28 divisions, some 300,000 troops and 1,800 tanks, for the Ardennes offensive.²⁴ Further, Hitler finally fully mobilized his economy, with production figures hitting a wartime high in Fall 1944. The offensive was delayed to 16 December to allow extra time for manpower and arms build up. Through extraordinary secrecy, the offensive achieved all the surprise and shock that Hitler intended.

The main axis of attack was in the north by the Sixth S.S. *Panzer* Army. The Fifth *Panzer* Army would protect their southern flank, with Seventh Army establishing blocking positions even further south. The allied forces were caught completely by surprise in the initial attacks on 16 December. By the end of the first day however, breakthroughs planned across the entire front, only materialized in one sector of Fifth *Panzer*'s area. Despite the

^a It seems ironic that the allies would discount the Ardennes as an avenue of attack considering the *Wehrmacht* used it so successfully in 1940. It seems possible that the allies were "mirror-imaging" the Germans.

shock and surprise of the initial attacks, the Germans advances were canalized along a limited road network. Major roads were straddled by towns and cities, which the allies ably defended. American units fought valiantly in isolated small unit engagements, denying the Germans the rapid advances they had anticipated.

In the south, Fifth *Panzer* attacked through the night, breaking through to Bastogne only to find it invested by American defenders a few hours before. Sixth *Panzer* took advantage of the breakthrough to south, shifting its advance southward to Fifth *Panzer*'s sector.²⁵ By 20 December, the Germans had pushed a massive salient in the allied lines and were some fifteen miles short of the Meuse River, but still a very long way from Antwerp. This was the high water mark for the Ardennes offensive. In the next few days, the allies were able to contain the offensive. By Christmas Eve, the weather broke, allowing allied fighters to operate over the Ardennes. The *Luftwaffe*, a broken force after attrition in years of air warfare, was unable to support the attack and only put up a token challenge to the allies. The allied air cover supported counterattacks that stopped the German offensive in its tracks (figure 5). The German commanders realized that their offensive has culminated well short of their objective and were looking for ways to consolidate their gains. Hitler, ever optimistic (or perhaps stubborn), refused and ordered the offensive to continue.²⁶ In the period from 24 December to 5 January, the allies rolled back most of the *Wehrmacht*'s gains. By 12 January, Hitler was already withdrawing to respond to a Soviet winter offensive. By 16 January, the offensive was over.

An Analysis of Shock, Awe and the Ardennes Offensive:

It is obvious from the allies' initial reactions, that they were caught completely off-guard. The offensive meted out a level of shock sufficient to push through along a

significant front. But it is equally obvious that shock was not sufficient to give Hitler the victory he anticipated. In this case, the shock was purely tactical, or at best low operational level, and was unable to translate to the operational level. Probably the single greatest factor limiting the shock value of the offensive was the canalizing of the attacks along the limited road net in the Ardennes. By canalizing the offensive along narrow, discreet lines, the Germans were unable to achieve the massively parallel attacks that would imbue the allies with the sense that the enemy was "everywhere." It also reduced the impact of the 28 division striking power as it forced attacks in a sequential rather than consecutive manner.

Another reason that shock never seemed to resonate at the operational level is, based upon the assessments of German operational commanders, there probably was not sufficient force to create shock across a 60-mile front. It would seem that shock requires some concentration of force versus space. In the Ardennes offensive, this impact was forcibly diluted due to insufficient combat resources. Since shock implies overwhelming the enemy, even if in a few selected areas, it would be interesting to look at shock in relation to combat force, or pulses of power, in a finite area (e.g., force per square mile).

Shock was never delivered in such a way to create the more enduring sense of awe. Much can be said about the ability to shock and awe across long periods of warfare. Is it as possible to shock and awe an adversary after years of fighting, particularly after he has survived the vicissitudes of war, as it would be at the onset of war? An intuitive answer would hold that as soldiers and armies gain combat experience, their threshold for shock raises (particularly if this experience includes some setbacks).

Conclusion:

Based upon the cases examined, shock is certainly not a condition sufficient in itself for victory. The Ardennes case makes that clear. However, it is also clear in that case that shock was merely applied at the tactical level and never created the ensuing condition of awe. Since the level of shock was reduced or mitigated by the lack of massively parallel attacks, the dilution of combat punch, and the likely high threshold for shock after years of fighting, the Ardennes offensive, while it uncovers some interesting questions about the nature of shock and awe in warfare, is not sufficient to disprove perceptual-effects strategies. In fairness, most perceptual-effects thinkers have developed their theories in response to capabilities that were not dreamed of during World War II.

The Sinai campaign, on the other hand, comes much closer to what these strategists have in mind. It had many of the characteristics that these theories are based upon—massively parallel attacks, blinding speed and simultaneity, etc. In this case the question is not whether shock and awe was a condition for the ensuing quick, decisive victory, but rather was it sufficient in and of itself? This is difficult to determine since the Egyptians did not sue for a ceasefire until faced with the prospect of having key population and government centers overrun. It seems clear that while shock and awe may not have resulted in the quick, decisive victory by themselves, it was a necessary condition for victory, which, when combined with one or more other conditions, would result in victory.

There is not a historical case that neatly fits the perceptual-effects theories. This is understandable since the technology for such a strategy is still in the evolution stage. But these cases serve well to expand on the rather vague assumptions that these theories have in common. Perceptual-effects theorists need to look at the lessons history offers and

incorporate them in their schema. Both cases bring out the importance in concentration of combat pulse and the necessity for simultaneity of attack. The need for speed and concentration in time seem equally evident.

Our case studies clearly indicate that such shock and awe will positively impact operations. While neither case disproved perceptual-effects strategies, both seem to prove the value of different aspects of such theories. This study is certainly not a stoplight for such theories, but rather a "proceed with caution" advisory. While elements of the theories have been demonstrated as valid, these elements were in a conventional context, since there has never been a purely perceptual-effects based major operation. At best, the Sinai case, as well as the Gulf War and Kosovo, incorporated a mix of perceptual-effects with physical-effects operations. This middle road is evidence of the cautious, yet increasing acceptance of perceptual-effects strategies. For example, Joint Pub 3.0 states that, "all military operations have a psychological effect on the parties involved," and incorporates perceptual-effects elements such as simultaneity and depth and focusing combat pulses of power in asymmetrical fashion.²⁷

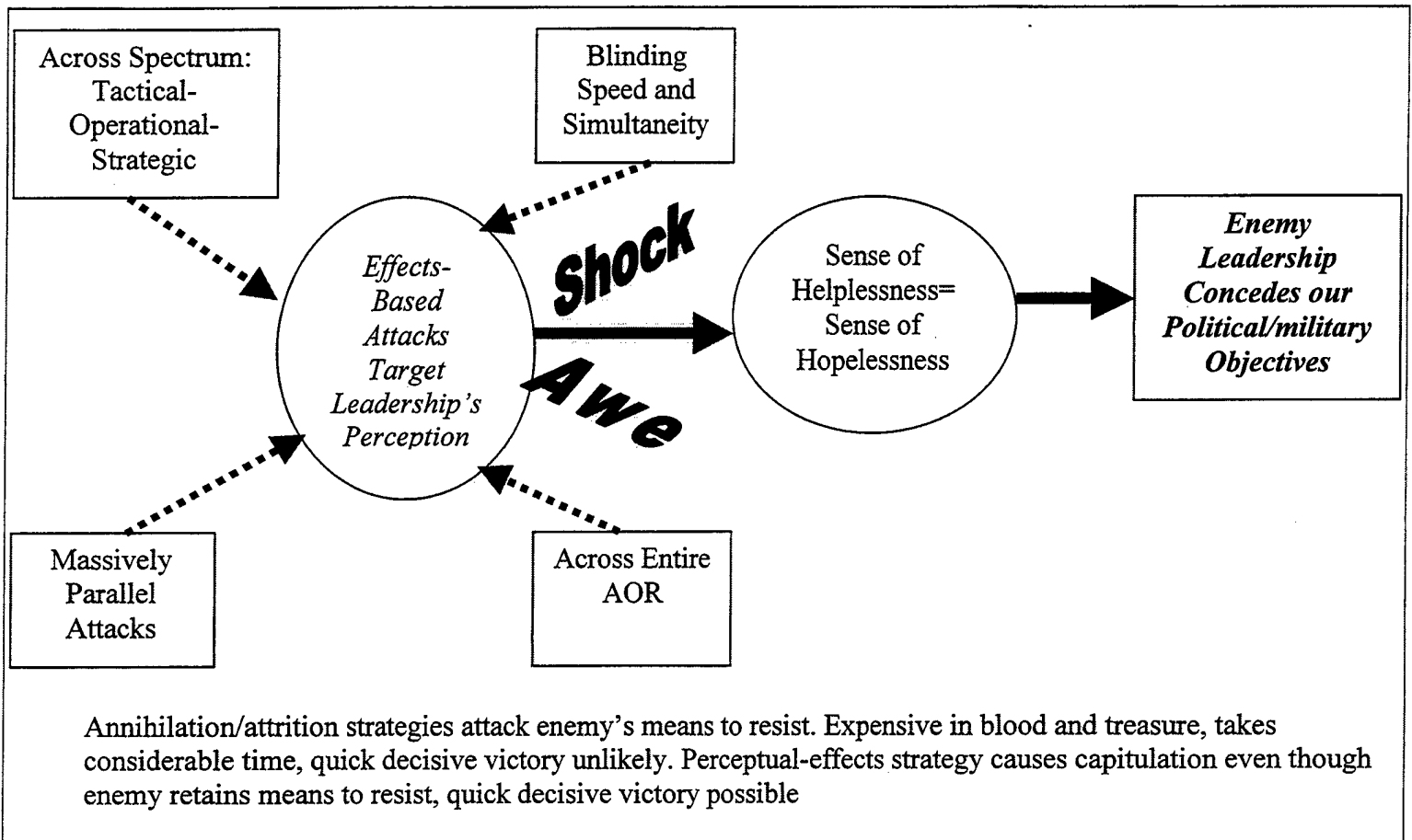
Much more investigation is required before U.S. forces have enough confidence in the theoretical prescriptions to apply them in pure perceptual-effects based operations. Special attention must be paid to the potential targets of our operations—the operational and political leadership. The intelligence necessary to effectively target leadership may not exist in the level of detail required. The more that is known about the target, the more likely perceptual-effects based operations will result in quick, less costly victory. The operational commander must understand the utility of shock and awe in perceptual-effects operations. This is particularly critical to nations like the U.S., which have limited tolerance for

causalities. If properly executed, shock and awe in perceptual-effects operations promises that we may, in the near future, be able to circumvent the messy requirement of beat-to-defeat the enemy's forces. It may one day allow quick, clean, low-causality (on both sides) operations by capitalizing on America's strength in technology and information systems.

On the other hand, if the operational commander repeats previously successful patterns of shock and awe, future adversaries will grow to expect our strategy and develop means to withstand or defeat it—in essence, that strategy will cease to shock and awe. He must ensure that each conflict is analyzed as a unique constellation of leadership attributes, with effects tailored to shock and awe that leadership. The warfighter must also deliberately select his mix of physical versus perceptual targets sets. In Operation Allied Force, the air war over Kosovo, the tension between a strategy of attacking fielded forces in Kosovo versus attacking leadership targets in downtown Belgrade under-resourced, and hence undermined, both strategies. The mix of strategies must be driven by the quality of leadership intelligence—the better the intelligence, the more favorable the opportunity to shock and awe the enemy leadership.

All too often, strategy consists merely of the best methods to hurt or destroy the adversary's forces. A better theory of victory may lie in understanding the enemy leadership and attacking his perception or understanding through shock and awe. The artful application of shock and awe in a perceptual-effects operation may represent an exponential force-multiplier, save U.S. (and enemy) lives, and increase the likelihood of quick, decisive victory. It is a strategy uniquely suited to the American way of war, which capitalizes upon America's strengths—superior technology, precision engagement and information dominance.

Figure 1: Perceptual Effects Based—Shock and Awe Chain of Causality



Courtesy U.S. Military Academy History Department



Figure 3: Six Day War: Sinai, 7-8 June 1967

Courtesy U.S. Military Academy History Department

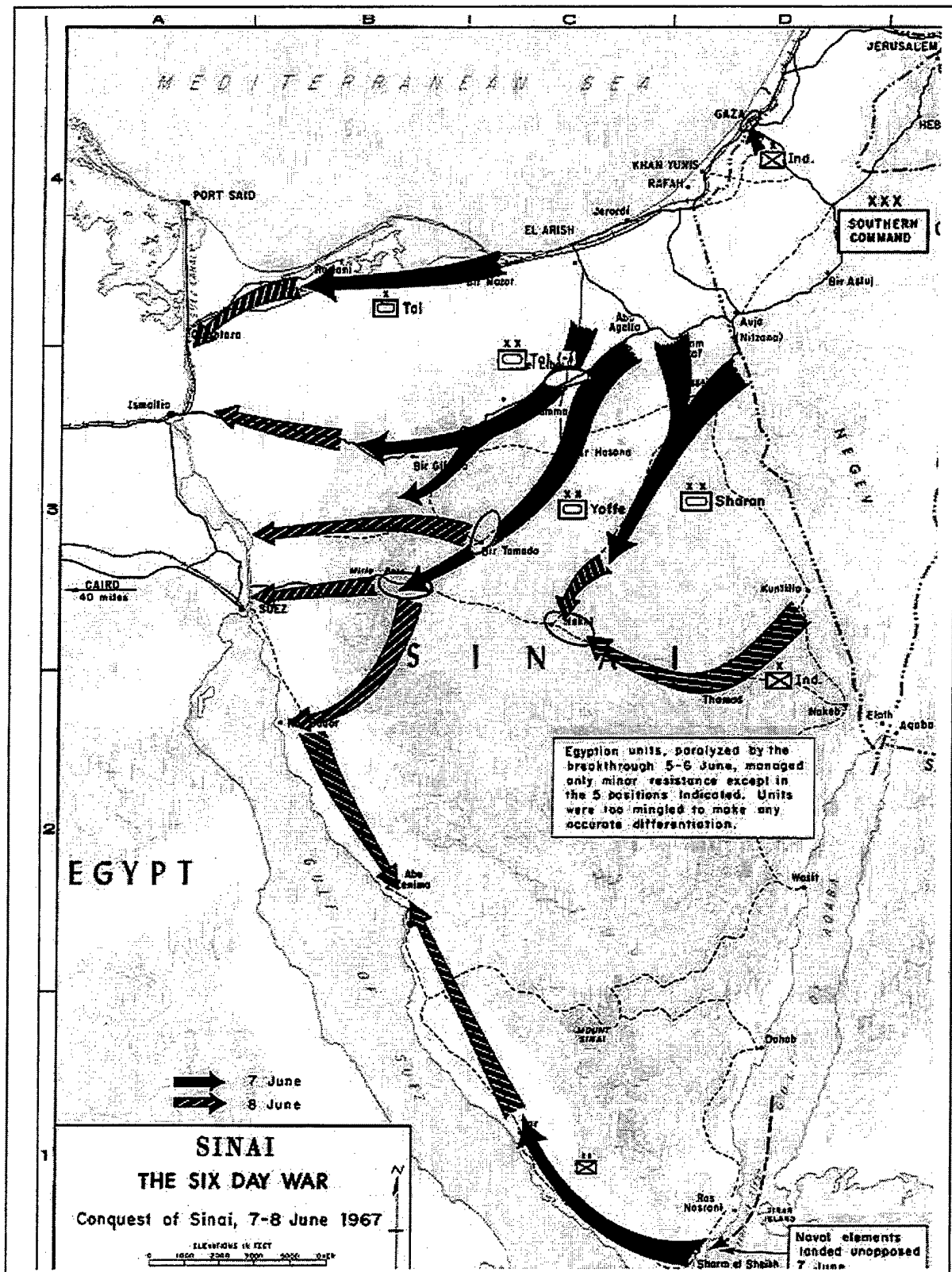


Figure 4: German Battle Plan for Ardennes Offensive

Courtesy of Center of Research and Information on the Battle of the Bulge-Belgium (C.R.I.B.A.), <http://users.skynet.be/bulgecriba>

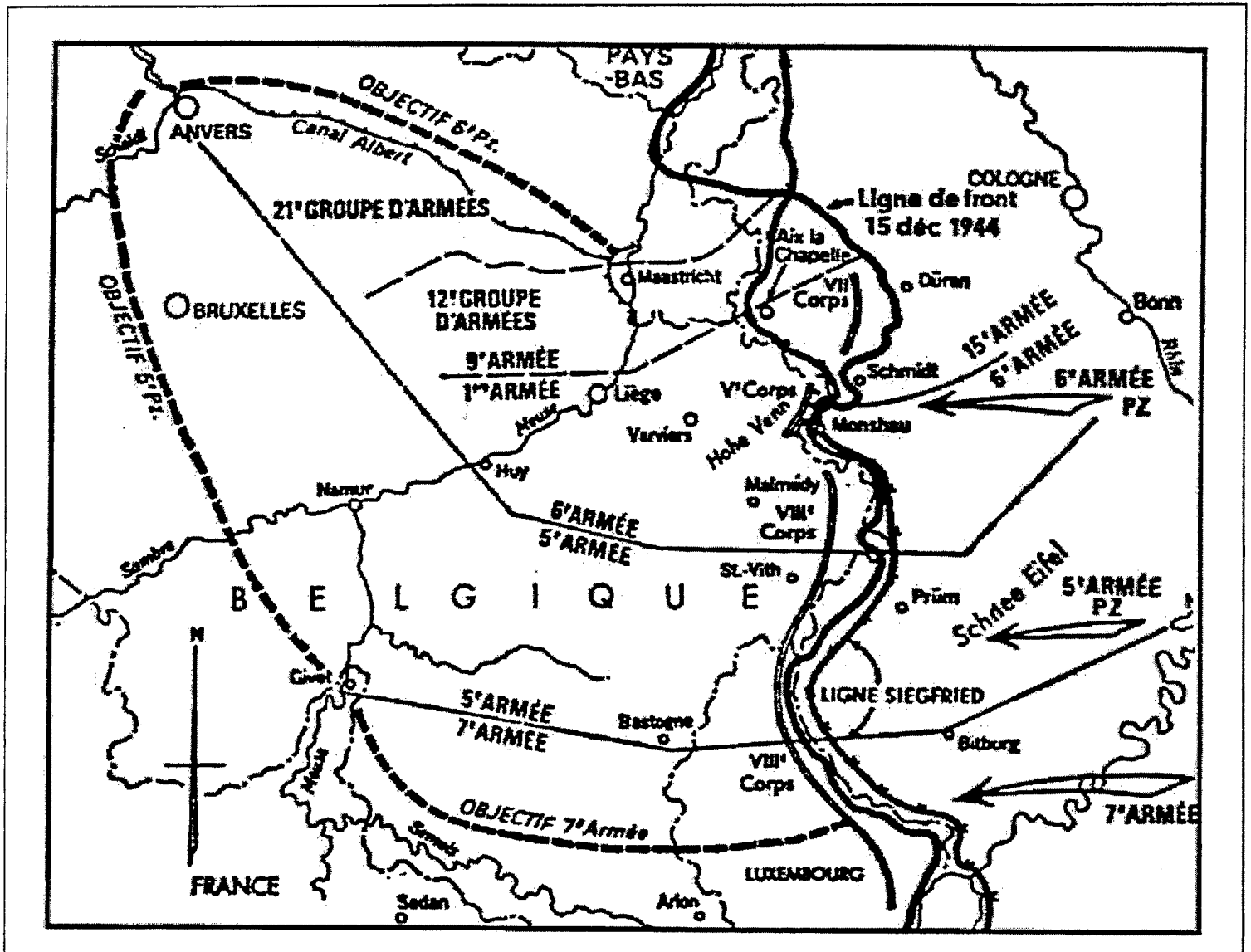
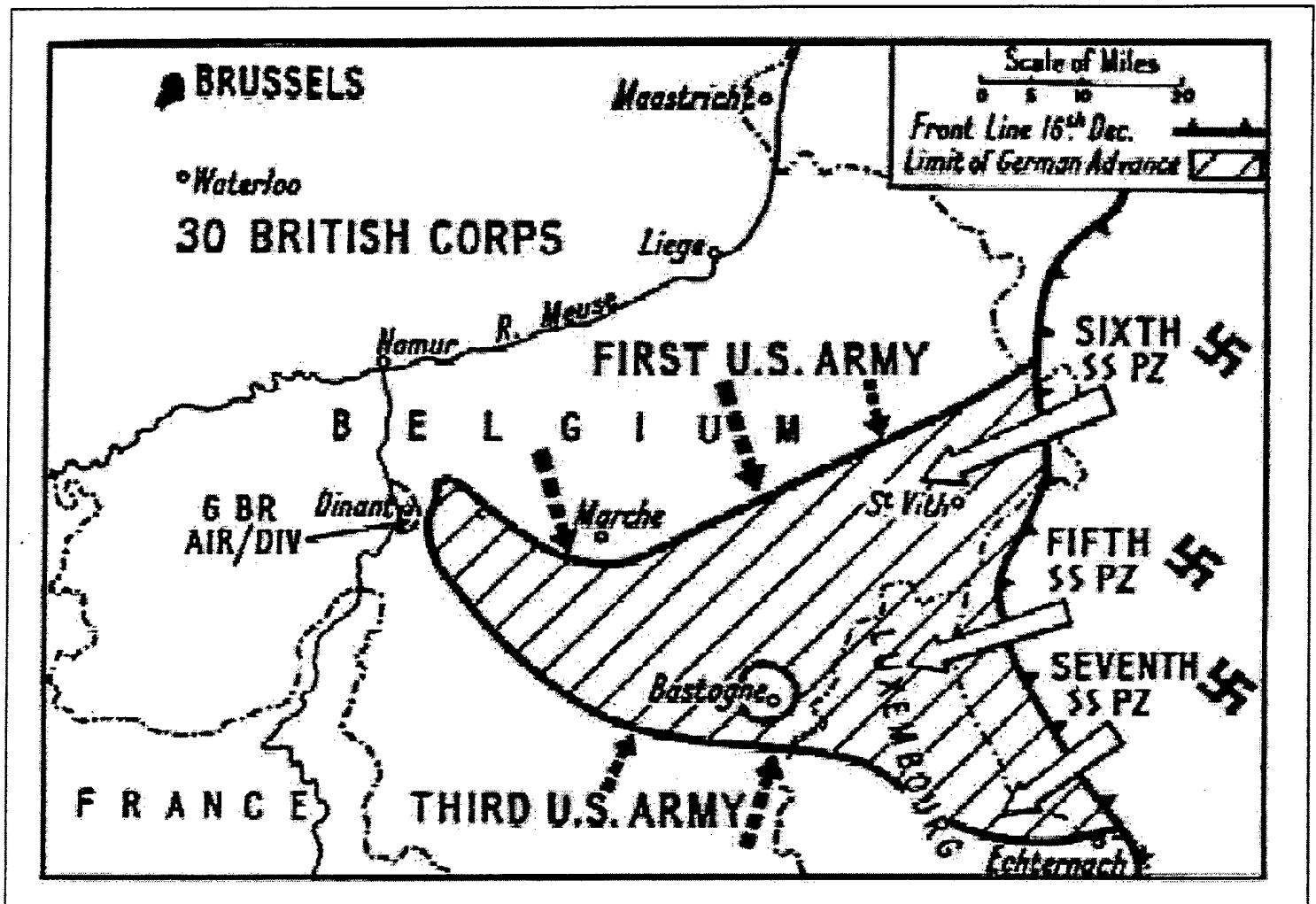


Figure 5: Limits of German Advance in Ardennes Offensive

Courtesy, Center of Research and Information on the Battle of the Bulge-Belgium
(C.R.I.B.A.), <http://users.skynet.be/bulgecriba>



Endnotes

- ¹ Carl von Clausewitz, *On War*, ed. Michael Howard and Peter Paret, (Princeton, Princeton University Press, 1976), 99.
- ² Hans Delbruck, *History of the Art of War Within the Framework of Political Histor.* Vol 4, trans. W.J. Renfro, Jr., (Lincoln, NE: University of Nebraska Press 1986), 279.
- ³ Basil H. Liddell Hart, *Paris: Or the Future of War* (New York: Garland Publishing 1972, c1925), 52.
- ⁴ Basil H. Liddell Hart, *Thoughts on War* (London: Faber and Faber, 1944), 20.
- ⁵ Harlan Ullman and James P. Wade, *Shock and Awe: Achieving Rapid Dominance* (Washington D.C: National Defense University, Center for Strategic Studies, 1996), xvi.
- ⁶ *Ibid.*, 12.
- ⁷ David S. Fadok, *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis* (Maxwell AFB, AL: Air University Press, 1995), 14.
- ⁸ John R. Boyd, *A Discourse on Winning and Losing, A collection of unpublished essays and briefings* (Maxwell AFB, AL: Air University Library, Document No. M-U 30352-16, no. 7791, 1987), in Fadok, 1995.
- ⁹ John A. Warden, "The Enemy as a System," *Airpower Journal*, Vol. IX, No. 1 (Spring 1995): 40-55.
- ¹⁰ Bradford A. Lee, in a lecture at the Naval War College, Jan 01.
- ¹¹ Hal Kosut, *Israel and the Arabs: The June 1967 War* (New York: Facts on File, Inc., 1968), 39-42.
- ¹² Israel Ministry of Foreign Affairs, *Menace: The Events That Led Up To the Six Day War and Their Lessons*, 1973, 12-16
- ¹³ Eric Hammel, *Six Days in June: How Israel Won the 1967 Arab-Israeli War* (New York: Charles Scribner's Sons, 1992), 56-71.
- ¹⁴ Charles B. Long, *Analysis of the Six Day War, Jun 1967* (Maxwell AFB, AL: Air University Press, 1984), 5.
- ¹⁵ T.M. Dupuy, *Elusive Victory: The Arab-Israeli Wars, 1947-1974* (New York: Harper and Row, 1978), 245.
- ¹⁶ Long, 6.
- ¹⁷ Peter Young, *The Israeli Campaign 1967* (London: Kimber, 1967), 102.
- ¹⁸ William C Varner, "Six Days in June," *Israel My Glory* (January/February 2001), Vol. 59 No. 1, (<http://www.foigdm.org/IMG/sixdays.htm>)
- ¹⁹ Danny S. Parker, ed., *The Battle of the Bulge-The German View: Perspectives from Hitler's High Command* (Pennsylvania: Stackpole Books, 1999), 7.
- ²⁰ Gerald A. Mocello, *The Battle of the Ardennes: Analysis of Strategic Leadership and Decisions* (Carlisle Barracks, PA: U.S. Army War College, 1999), 13.
- ²¹ Hasso Von Manteuffel, *Decisive Battles of World War II: The German View*, ed. H.A. Jacobsen and J Rohwer (New York: G. P. Putnam's Sons, 1965), 400-402.
- ²² John Strawson, *The Battle for the Ardennes* (New York: Charles Scribner's Sons, 1972), 39.
- ²³ *Ibid.*, 26.
- ²⁴ Percy Ernst Schramm, *The Preparations for the German Offensive in the Ardennes*, in Danny S. Parker, ed., *The Battle of the Bulge-The German View: Perspectives from Hitler's High Command* (Pennsylvania: Stackpole Books, 1999), 112-119; Strawson, 31; Mocello, 22,
- ²⁵ Mocello, 30-32.
- ²⁶ Manteuffel, 409.
- ²⁷ U.S. Department of Defense, *Doctrine for Joint Operations* (DoD: Feb 95)

References

- Barlow, Jason B., Strategic Paralysis: An Airpower Theory for the Present. Maxwell AFB, AL.: Air University Press, 1994.
- Bond, Brian, The Pursuit of Victory: From Napoleon to Saddam Hussein. New York: Oxford University Press, 1996.
- Bond, Brian, Liddell Hart: A Study of His Military Thought. London: Cassell, 1976.
- Boyd, John R., "A Discourse on Winning and Losing, A Collection of Unpublished Essays and Briefings," Air University Library, Document No. M-U 30352-16, no. 7791.
- Byford-Jones, W., The Lightning War. New York: Bobbs-Merrill Co., 1967.
- Center of Research and Information on the Battle of the Bulge-Belgium (C.R.I.B.A.), <http://users.skynet.be/bulgecriba>
- Churchill, Randolph S. and Churchill, Winston S., The Six-Day War, Boston: Houghton-Mifflin, 1967.
- Cirillo, Roger, Ardennes-Alsace: The U.S. Army Campaigns in World War II. U.S. Army, 1995.
- Clancey, Tom, Every Man A Tiger. New York: G.P. Putnam's Sons, 1999.
- Clausewitz, Carl von, On War, ed. Michael Howard and Peter Paret. Princeton: Princeton University Press, 1976.
- Delbruck, Hans, History of the Art of War Within the Framework of Political History. Vol 4, trans. W.J. Renfroe, Jr., Lincoln, NE: University of Nebraska Press, 1986.
- Dupuy, T.M., Elusive Victory: The Arab-Israeli Wars, 1947-1974, NY: Harper and Row, 1978.
- Fadok, David S., *John Boyd and John Warden: Air Power's Quest for Strategic Paralysis*, Maxwell AFB, AL: Air University Press, 1995.
- Hammel, Eric, Six Days in June: How Israel Won the 1967 Arab-Israeli War, New York: Charles Scribner's Sons, 1992.
- Israel Ministry of Foreign Affairs, Menace: The Events That Led Up To the Six Day War and Their Lessons, Tel Aviv: 1973.

-
- Jacobsen, H.A., and Rohwer, J., ed., Decisive Battles of World War II: The German View, New York: G. P. Putnam's Sons, 1965.
- Kievit, James O., Operational Art in the 1944 Ardennes Campaign. Fort Levenworth, KS: U.S. Army School of Advanced Military Studies (DTIC), 1987.
- Kimche, David and Bawly, Dan, The Sandstrom: The Arab-Israeli War of June 1967, Prelude and Aftermath. New York: Stein and Day, 1968.
- Kosut, Hal, Israel and the Arabs: The June 1967 War, New York: Facts on File, Inc., 1968.
- Libicki, Martin C., Illuminating Tomorrow's War. Washington, D.C.: National Defense University, 1999.
- Liddell Hart, Basil H., Thoughts on War. London: Faber and Faber, 1944.
- Liddell Hart, Basil H., The Revolution in Warfare. New Haven, CT: Yale University Press, 1947.
- Liddell Hart, Basil H., History of the Second World War. London: Cassell, 1970.
- Liddell Hart, Basil H., Paris: Or the Future of War, New York: Garland Publishing, 1972, c1925.
- Long, Charles B., "Analysis of the Six Day War, Jun 1967," Maxwell AFB, AL: Air University Press, 1984.
- McGinnis, Thomas M., Jomini and the Ardennes: An Analysis of Lines of Operation and Decisive Points. Fort Levenworth, KS: U.S. Army School of Advanced Military Studies (DTIC), 1988.
- Mocello, Gerald A., The Battle of the Ardennes: Analysis of Strategic Leadership and Decisions. Carlisle Barracks, PA: U.S. Army War College, 1999
- Parker, Danny S., ed., The Battle of the Bulge-The German View: Perspectives from Hitler's High Command. Pennsylvania: Stackpole Books, 1999.
- Scales, Robert H., Future Warfare. Carlisle Barracks, PA: U.S. Army War College, 1999.
- Strawson, John. The Battle for the Ardennes. New York: Charles Scribner's Sons, 1972.
- Sun Tzu, The Art of War. Ed. Griffith, Samuel B., New York: Oxford University Press, 1963.

U.S. Department of Defense, Doctrine for Joint Operations. DoD: Feb 95

Varner, William C., "*Six Days in June*," Israel My Glory, January/February 2001 Vol. 59 No. 1, (<http://www.foigm.org/IMG/sixdays.htm>)

Webster's Encyclopedic Dictionary of the English Language, Gramarcy Books, NY, 1994.

Warden, John A., The Air Campaign. Washington D.C.: Brassey's, 1989.

Warden, John A., "The Enemy as a System," Airpower Journal, Vol IX, No. 1, Spring 1995.

Young, Peter, The Israeli Campaign 1967, Kimber, London, 1967.

Harlan Ullman and James P. Wade, Shock and Awe: Achieving Rapid Dominance. Washington D.C: National Defense University, Center for Strategic Studies, 1996.

Harlan Ullman and James P. Wade, Rapid Dominance: A Force For All Seasons. London: Royal United Services Institute for Defense Studies, 1998.